

REMARKS

In a non-final Office Action dated October 2, 2007, the Examiner in charge of this application rejected the pending Claims 5-7 and 9-11 under 35 U.S.C. § 102(b) and under the doctrine of non-statutory obviousness-type double patenting. Applicants respond to each rejection below.

Rejections Under 35 U.S.C. § 102(b)

Claims 5-7 and 9-11 stand rejected under 35 U.S.C. § 102(b) as anticipated by US Patent No. 6,589,726 to Butler *et al.* (Butler). The Examiner alleged that Butler disclosed a method and apparatus for *in situ* synthesis on solid supports, without the use of photoresist, such that the solid support utilizes differences in surface tension to provide reaction sites that anticipates the pending claims. Previous rejections over this patent had been imposed under 35 U.S.C. § 102(e). The patent is not available as prior art under § 102(b) as it was first published less than one year before Applicants' filing date. The reference to § 102(b) may have been unintended, so Applicants respond to the rejection presuming that rejections under § 102(e) were intended.

Applicants again respectfully traverse the rejection, and reiterate that Butler does not disclose maskless array synthesis of probe sets and hydrophobic sites on the array. Indeed, Butler is silent as to maskless array synthesis. As previously noted, Butler fails to disclose every limitation and element as recited in the pending claims. MPEP § 2131.

The Examiner may not be familiar with the art-recognized term "maskless array synthesizer." The Examiner may be reading this term of art on its face, without ascribing to it the meaning given in the specification and in the art. Perhaps under that interpretation, the Examiner may have presumed that Butler's 'drop-on-demand' (inkjet) technology meets the claim language because Butler synthesizes an array and, in this embodiment, does not employ a photoresist. However, Applicants traverse the suggestion by the Examiner that what Butler accomplished corresponds to what Applicants did and claimed.

Butler described two approaches for making arrays. The primary approach, irrelevant here, is a light-based method that required a mask or photoresist, in direct contrast to Applicants' process and to the claim language. The secondary approach, relied upon by the

Examiner, does not use a mask or photoresist, but is not a "maskless array synthesis" method, as the term is used in the art and in the specification.

Applicants' specification described on page 1 in the Background of the Invention that "maskless array synthesizer" refers to an instrument (and corresponding method -- "maskless array synthesis") for in situ array light-directed synthesis using an instrument that contains a digital micromirror device (DMD) array. The DMD array is now also commercialized by Texas Instruments as a so-called Digital Light Processing (DLP) chip in, e.g., televisions.

Light-directed maskless array synthesis is generally viewed, in at least some disciplines, as a higher-throughput successor to inkjet delivery systems that does not require mechanical delivery of reagents to individual positions on the array. MAS accomplishes protection and deprotection by precisely directing light from very small mirrors to very small positions ("features") on a substrate. The micromirrors are controlled by an external controller, so the position of each can be readily adjusted over the course of the remarkably flexible and adaptable synthesis process.

In contrast, the so-called 'drop-on-demand' inkjet technology simply dispenses small amounts of chemicals at desired positions on a substrate so that a chemical, but not photochemical, reaction of interest can proceed. The Examiner's reference to column 10, line 13 - column 11, line 61 of Butler is consistent with an inaccurate understanding of the term "maskless array synthesizer." The highlighted section of paragraph (28) describes a chemical-based protection/deprotection scheme (and process and apparatus) that is not orchestrated by light. Paragraph (26) confirms Applicants' understanding that the secondary Butler system is not a non-light-directed approach, because Butler there describes "DMT-protected" agents. DMT is an acid-labile, but not photo-labile, reagent not amenable to use in a light-directed synthesis system.

To advance prosecution and to clarify the claims, Applicants amend the independent claims to recite that the maskless array synthesizer instrument is a light-directed instrument.

In view of these remarks and the amendments, Applicants respectfully request reconsideration of the rejection as applied to Claims 5-7 and 9-11.

Non-Statutory Obviousness-Type Double Patenting

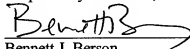
Claims 5-7 and 9-11 stand provisionally rejected under the judicially created doctrine of non-statutory obviousness-type double patenting in view of Claim 16 of co-pending U.S. Patent Application No. 10/674,768 (the '768 application, filed Sept. 30, 2003). Applicants acknowledge the provisional rejection and will address the rejection upon an indication of allowable subject matter in either this or the cited application.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone applicants' attorney at the number listed below so that such issues may be resolved as expeditiously as possible. For the reasons stated above this application is now considered to be in condition for allowance and such action is earnestly solicited.

Fees

A petition for a three-month extension of time accompanies this response so that it will be deemed to have been timely filed. No additional fees are believed due; however, if any fees are due, in this or any subsequent response, please charge Deposit Account 17-0055.

Respectfully submitted,



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